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DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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M/053/005

March 9, 1992

TO: Board of Oil, Gas and Mining

THRU: Lowell P. Braxton, Associate Director, Mining *LB*

FROM: D. Wayne Hedberg, Permit Supervisor *DWH*

RE: Request for Board Approval, Amount and Form of Revised Reclamation Surety, Tenneco Minerals Company, Goldstrike Mine, M/053/005, Washington County, Utah

The Division is seeking the Board's approval of the amount and form of revised reclamation surety as provided by Tenneco Minerals Company (TMC) for their Goldstrike Mine. The operator received conditional approval from the Division for a mine plan permit amendment on March 10, 1992. The permit amendment will involve construction of one new open pit (Covington) and its attendant access/haul road. All of the proposed 45 acres of surface disturbance will be located on patented/private land held by TMC.

Tenneco Minerals has provided the Division with a new Reclamation Contract (FORM MR-RC) and a revised \$2,000,000 reclamation surety bond, from Aetna Casualty & Fire Insurance Company. The revised surety will be more than adequate to reclaim the additional disturbances associated with this permit amendment. The "excess" surety is intended to cover the estimated reclamation costs of a more extensive permit revision which the Division and Bureau of Land Management are currently reviewing.

Please find the following items attached for your evaluation:

1. Executive Summary
2. Summary Checklist
3. Reclamation Cost Estimate
4. General Location Map
5. Reclamation Contract
6. Reclamation Surety Bond

Thank you for your time and consideration of this permitting request.

DOGM MINERALS PROGRAM

Checklist for Board Approval
of
FORM AND AMOUNT OF SURETY

Prepared March 10, 1992

Mine Name Goldstrike
File No. M/053/005

Items	Provided		Remarks
	Yes	No	
Executive Summary	X		Revised summary to include permit amendment.
Location Map	X		
Reclamation Bond Estimate	X		
Signed Reclamation Contract	X		
Signed Power of Attorney/ Affidavit of Qualification	X		
Bond/Reclamation Surety	X		
Surety Sign Off (Other State/Federal Agencies)		X	BLM signoff not required for this permit amendment.

EXECUTIVE SUMMARY

Revised March 10, 1992

(NOI revisions - 10/5/90, 1/22/92; NOI amendments - 3/5/92)

Mine Name: Goldstrike
Operator: Tenneco Minerals Company
P. O. Box 2650
St. George, Utah 84770

I.D. No: M/053/005
County: Washington
New/Existing: Existing Mine -
Original permit approved 8/88.
Mineral Ownership: Federal/Private
Surface Ownership: Federal/Private
Lease No.(s): Refer to Appendix A
Permit Term: Life of mine

Telephone: (801) 574-3164
Contact Person: Ken Kluksdahl

Life of Mine: Present reserves to be depleted by mid-1995

Legal Description: Township 39 South, Range 18 West, portions of Sections 16, 17, 19, 20 and 21

Mineral(s) to be Mined: Gold, silver

Mining Methods: Open Pit Mining - Cyanide heap leach operation

Acres to be Disturbed: 270.3 (includes 3/5/92 amdmnt. acreage = @45 acres), 1/22/92 revision
presently under staff review.

Present Land Use: Wildlife habitat, recreational, mining and exploration

Postmining Land Use: Same as above

Variances from Reclamation Standards (Rule R613) Granted: R613-004-111.6,
R613-004.111.7, R613-004-111.9

Soils and Geology:

Soil Description: Undeveloped colluvium on steep slopes, relatively shallow, poorly developed
soils, consisting of - gravelly silty loams, silty clays, gravelly clay loams, gravelly silt loams,
sandy loams and gravelly sandy loams.

pH: 7.96 - 8.11

Special Handling Problems: Rocky outcrops and steep slopes lack salvageable topsoil

Geology Description: Bull Valley Mining District, complex geology, consisting of highly deformed and faulted Tertiary, Pennsylvanian and Mississippian sedimentary deposits and Tertiary volcanic rocks. Present structure at Goldstrike property consists of arcuate high-angle faults forming a structural graben in middle of property. Approximately 50% of site area consists of volcanic tuff outcrop.

Hydrology:

Ground Water Description: Measured water depths from drill holes vary from 20.5 feet to 208.5 feet. Flow velocities range from 0.75 to 751 feet per year. Average water table flow gradient is 0.154 feet/ft. Class II groundwater quality classification.

Surface Water Description: One principal stream, Quail Creek, intersects the mine property. Quail Canyon Creek is intermittent, approximately 2 miles above the mine site and ephemeral at mine site. Quail Cyn. Ck. is part of the Quail Canyon/Arsenic Gulch watershed, which is tributary to the East Fork Beaver Dam Wash. Development of the Covington pit will affect Jackson Gulch, and a few additional unnamed ephemeral drainages also tributary to East Fork Beaver Dam Wash.

Water Monitoring Plan: Onsite observation wells are being monitored pursuant to State Health requirements.

Ecology:

Vegetation Type(s); Dominant Species: Pinyon - Juniper Community, Pinyon pine, Utah juniper, Utah service berry, shrub live oak.

Percent Surrounding Vegetative Cover: 18%

Wildlife Concerns: Fencing to be used to keep animals away from process solution ponds. Half round corrugated plastic culverts are used to cover open leach process solution ditches.

Existing Surface Facilities: 8 open pits, 3 mine dumps, crushing plant, heap leach facilities, Carbon Absorption plant, small gold smelter, solution ponds and mine offices.

Proposed Facilities: 1 new open pit, and haul road construction to the new Covington pit (@45 acres disturbance).

Mining and Reclamation Plan Summary:

During Operations:

With the addition of the Covington pit, Tenneco will be approved to mine a total of 9 open pits for gold ore. The ore will be crushed and removed to the leach pads for cyanide processing. The gold-bearing solutions are processed in a Carbon Absorption recovery plant, and a small gold smelter. Mining commenced in 1988 and is expected to conclude in mid-1995, unless further exploration identifies additional mineable reserves.

Following Operations:

1. The leach pads and ponds will have residual cyanide values neutralized, then these structures will be decommissioned, graded, topsoiled, and revegetated.
2. All buildings and process equipment will be removed. Concrete foundations will be demolished and buried.
3. All pits will either be totally backfilled, or backfilled to the extent such that surface runoff would drain away from them.
4. Safety berms or fences will be constructed adjacent to any highwalls remaining after mining.
5. The Quail Canyon fill dam will be left for livestock and wildlife watering.
6. The BLM will maintain a road through the mine site connecting Road No. 42529 with the County Road along East Fork of Beaver Dam Wash.
7. Of the 270 acres to be disturbed, approximately 30 acres, associated with the pit highwalls, will be left unreclaimed. The remaining disturbed areas will be regraded, topsoiled and revegetated.
8. Post mine landuse will consist of livestock grazing and wildlife habitat.

Surety:

Amount: \$2,000,000
Form: Surety Bond
Renewable Term: (1997 Dollars)

RECLAMATION ESTIMATE

Tenneco Minerals Company M/053/005
 Goldstrike Mine Washington County
 COVINGTON AMENDMENT last rev. March 10, 1992
 Prepared by Utah State Division of Oil, Gas & Mining

Reclamation Details

- Tenneco area estimates & unit costs are used in this estimate
- ***This estimates applies to the Covington Amendment ONLY
- Includes: Covington Pit-Road-&-Topsoil area, road #1 & #2 topsoil stockpiles
- Access roads regraded, topsoiled, scarified & seeded; zone = adjacent to road
- ASSUME backfill ~10% of total pit volume; 4.8 pit acres unreclaimed
- Large drainage basin crossings = culverts; small basin crossings = low flow
- All drainage crossings to be recontoured at final reclamation
- Topsoil stockpile areas only scarified & seeded
- Hauling and placing topsoil by scrapers, dozers, & water truck
- Seeding, mulching, crimping & fertilizing costs = Tenneco estimate
- Acreage: pit-8.7, pit topsoil-2.0, road #1 topsoil-0.8, road #2 topsoil-0.7 road-6.5, road zone-21.8; total reclaimed acreage = 40.5
- Construction supervision during reclamation; Total disturbed acreage = 45.3

<u>Description</u>	<u>Amount</u>	<u>\$/Unit</u>	<u>Cost-\$</u>
Backfill Covington Pit	135,000 CY	0.50	67,500
Regrade access roads	6.5 acre	3,900	25,350
Prevent access to regraded roads	1 sum	600	600
Recontour drainages (large x-ings)	2 each	1,200	2,400
Recontour drainages (small x-ings)	5 each	330	1,650
Topsoil: pit, road & road zone	62,650 CY	0.60	37,590
Scarify: pit, road, zone & stockpiles	40.5 acre	325	13,163
Seed: pit, road, zone & stockpiles	40.5 acre	452	18,306
Supervision	6 week	1,000	6,000
Mobilization (5 pieces of equip)	5 each	1,000	5,000
SUBTOTAL			177,559
+ 10% CONTINGENCY			17,756
SUBTOTAL			195,314
+ 5 yr ESCALATION(1.27%)			12,722
TOTAL			208,036
ROUNDED TOTAL IN 1997-\$			\$208,000

*** Avg cost per acre = 5,136 \$/acre